

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A semiconductor device comprising:
 - a semiconductor element having a first coefficient of thermal expansion;
 - a first metal plate bonded to one side of the semiconductor element;
 - an intermediate layer bonded to one side of the first metal plate remote from the semiconductor element, the intermediate layer being made of a carbon-copper composite material;
 - a second metal plate bonded to one side of the intermediate layer remote from the first metal plate;
 - an insulating member bonded to one side of the second metal plate remote from the intermediate layer; and
 - a third metal plate bonded to one side of the insulating member remote from the second metal plate, the third metal plate having a thickness substantially equal to that of the second metal plate; and,
 - a heat sink having a second coefficient of thermal expansion, said second coefficient of thermal expansion being different than said first coefficient of thermal expansion;
 - wherein the intermediate layer absorbs and moderates thermal stress

resulting from said first coefficient of thermal expansion being different than said second coefficient of thermal expansion, and

wherein the first, second and third metal plates are made of a same material.

2. (Cancelled)

3. (Currently Amended) A semiconductor device comprising:

a semiconductor element having a first coefficient of thermal expansion;

a heat sink having a second coefficient of thermal expansion, said second coefficient of thermal expansion being different than said first coefficient of thermal expansion; and

a laminar plate provided between the semiconductor element and the heat sink, said laminar plate including an intermediate layer for absorbing and moderating thermal stress resulting from said first coefficient of thermal expansion being different than said second coefficient of thermal expansion,

wherein the laminar plate comprises a first metal plate, the intermediate layer, a second metal plate, an insulating member, and a third metal plate, wherein:

said first metal plate being interposed between the semiconductor element and the intermediate layer, said first metal plate having one side bonded to the semiconductor element and an opposite side bonded to a first side of the intermediate layer;

said second metal plate being interposed between the intermediate layer and the insulating member, whereby one side of said second metal plate is bonded to a second, opposite side of the intermediate layer and the other side of said second

metal plate is bonded to a first side of the intermediate layer; and

said insulating member is interposed between the second and third metal plates, whereby said third metal plate is bonded to a second, opposite side of the insulating member.

4. (Cancelled)

5. (Previously Presented) The semiconductor device according to claim 3, wherein a thickness of the second metal plate is equal to a thickness of the third metal plate.

6. (Previously Presented) The semiconductor device according to claim 3, wherein the intermediate layer for moderating thermal stress comprises a carbon-copper composite material.

7. (Previously Presented) The semiconductor device according to claim 1, wherein the first metal plate further includes a nickel plating on a surface of the first metal plate to which the semiconductor element is mounted.

8. (Currently Amended) ~~The~~ A semiconductor device ~~according to claim 1, comprising:~~

A semiconductor device comprising:

a semiconductor element;

a first metal plate bonded to one side of the semiconductor element;

an intermediate layer bonded to one side of the first metal plate remote from the semiconductor element, the intermediate layer being made of a carbon-copper composite material;

a second metal plate bonded to one side of the intermediate layer remote from the first metal plate;

an insulating member bonded to one side of the second metal plate remote from the intermediate layer; and

a third metal plate bonded to one side of the insulating member remote from the second metal plate, the third metal plate having a thickness substantially equal to that of the second metal plate; and,

a heat sink;

wherein the first, second and third metal plates are made of a same material,
and

wherein a thickness of the second metal plate and the third metal plate is greater than a thickness of the first metal plate.

9. (Previously Presented) The semiconductor device according to claim 1, wherein the insulating member is formed of a material that is an electrical insulator and a thermal conductor.

10. (Previously Presented) The semiconductor device according to claim 9, wherein the insulating member is formed of SiN.

11. (Previously Presented) The semiconductor device according to claim 3,

wherein a thickness of the second metal plate and the third metal plate is greater than a thickness of the first metal plate.

12. (Previously Presented) The semiconductor device according to claim 3, wherein the insulating member is formed of a material that is an electrical insulator and a thermal conductor.

13. (Previously Presented) The semiconductor device according to claim 12, wherein the insulating member is formed of SiN.

14. (Previously Presented) The semiconductor device according to claim 3, wherein the first metal plate further includes a nickel plating on a surface of the first metal plate to which the semiconductor element is mounted.

15. (Previously Presented) The semiconductor device according to claim 1, wherein the semiconductor element has a first side and a second side, the first metal plate has a first side and a second side, and the intermediate layer has a first side and a second side,

wherein, the semiconductor element second side is directly bonded to the first side of the metal plate, and the second side of the metal plate is directly bonded to the first side of the intermediate layer.

16. (Previously Presented) The semiconductor device according to claim 3, wherein the semiconductor element has a first side and a second side, the first

metal plate has a first side and a second side, and the intermediate layer has a first side and a second side,

wherein, the semiconductor element second side is directly bonded to the first side of the metal plate, and the second side of the metal plate is directly bonded to the first side of the intermediate layer.